

REMARKS/ARGUMENTS

Applicants amended claim 16 to correct a minor error of a duplicate “the”.

1. Claims 1-7, 11-13, 15-21, 25-27, 29-35, and 39-41 are Patentable Over the Cited Art

The Examiner rejected claims 1-7, 11-13, 15-21, 25-27, 29-35, and 39-41 as obvious (35 U.S.C. §103) over Pettus (U.S. Patent No. 6,223,217) in view of Fielding (U.S. Patent No. 6,012,084). Applicants traverse.

Claims 1, 15, and 29 concern allowing communication among processing nodes in a system, and require: receiving, in a source node, a request from a source object executing in the source node to send a message to a destination object executing in a destination node, wherein each node includes a processor capable of multitasking multiple program objects and a communication interface to transmit and receive data with the other nodes; determining, in the source node, whether the destination node and source node are a same node; invoking an operating system command in the source node to transmit the message to the destination object within the source node if the destination node is the source node; and if the destination node is not the source node, performing: (i) transmitting, with the source node, the message to the destination node through the communication interface; and (ii) invoking an operating system command in the destination node to transmit the message to the destination object within the destination node.

The Examiner acknowledged that Pettus does not teach the claim requirements of invoking an operating system command in the source node to transmit the message to the destination object within the source node if the destination node is the source node and invoking an operating system command in the destination node to transmit the message to the destination object within the destination node. The Examiner cited portions of Fielding as teaching these claim requirements. (Second Office Action, p. 4) Applicants traverse.

The Examiner cited col. 11, lines 15-33 of Fielding and the lcnai library 10 as teaching the claim requirement of invoking an operating system command in the source node to transmit the message to the destination object within the source node if the destination node is the source node. (Second Office Action, pg. 4) Applicants traverse.

The cited col. 11 mentions that the lcnai 10 library provides access to communication functionality available to client tasks of the invention, and provides the raw messaging and RPC

functionality through an addressing abstraction. A library is built from this component Tasktalk library 8 linked into all client tasks.

Nowhere does this cited col. 11 anywhere teach or suggest that the lclmai 10 library comprises an operating system command that transmits the message to the destination object. Further, additional parts of Fielding indicate that the lclmai library 10 is not an operating system command. For instance, Fielding mentions that nodes run on hardware/operating system platforms. Each node includes a collection of tasks shown in FIG. 2, some application tasks 2 and support tasks. (Fielding, col. 8, lines 30-34) FIG. 2 shows the cited lclmai library 10 as providing support services for applications, specifically access to communication functionality. (Fielding, col. 8, lines 35-50, Table 2-1).

Applicants submit that Fielding teaches away from the cited lclmai 10 being an operating system command that is invoked to transmit the object when the destination node is the source node because the cited lclmai library 10 is part of a node that runs on an operating system platform, and thus is not an operating system command as claimed.

The Examiner cited col. 23, line 62 to col. 24, line 5 as teaching the claim requirement of invoking an operating system command in the destination node to transmit the message to the destination object within the destination node. (Second Office Action, p. 4) Applicants traverse.

The cited cols. 23-24 mentions using SUN's rpcgen functionality to pack a message and send it in a message or use it in an RPC call. Automatic unpacking of these messages are also supported. The Examiner has not cited any part of Fielding or other art that shows that the rpcgen functionality or RPC call used to send the message comprises an operating system command in the destination node that is used to transmit the message to the destination object within the destination node. Further, the cited cols. 23-24 do not teach the claim requirements because they discuss an RPC call regardless of whether the application and service are on the same node or machine.

Accordingly, claims 1, 15, and 29 are patentable over the cited art because the cited Pettus and Fielding, alone or in combination, do not teach or suggest all the claim requirements.

Claims 2-7, 11-13, 16-21, 25-27, 30-35, and 39-41 are patentable over the cited art because they depend from one of claims 1, 15, and 29, which are patentable over the cited art for

the reasons discussed above. Moreover, the below discussed claims provide additional grounds of patentability over the cited art.

Claims 2, 16, and 30 depend from claims 1, 15, and 29 and further recite that there is a message queue associated with each object in each node, and wherein, the invoked operating system command in the source node transmits the message to the message queue associated with the destination object.

The Examiner cited col. 14, lines 3-16 of Fielding as teaching the claim requirement of a message queue associated with each object in each node. (Second Office Action, pg. 5) Applicants traverse.

With respect to queues, the cited col. 14 mentions that messages are sent using message queues, and lcnmc 5 allocates a send and receive queue per communications port and manages the port to message queue mapping. Tasks obtain ports through a library that keeps track of all system ports assigned on the node for message routing.

Nowhere does the cited col. 14 anywhere teach or suggest that a message queue is associated with each object in each node and that the source node sends the message to the message queue associated with the destination object. Instead, in the cited col. 14, a queue is provided for each port. Thus, in the cited col. 14 the message would be sent to a queue for a port, not a queue associated with a destination object as claimed.

Further, the cited col. 14 mentions that the port to message queue mappings are managed for all tasks. This teaches away from associating a message queue with each object and sending the message to a message queue associated with an object. Instead, the messages are sent to the queue for a port, not the object as claimed.

Moreover, nowhere does the cited Fielding teach or suggest that an operating system command in the source node is invoked to transmit the message to a message queue for the destination object when the source and destination nodes are the same. The cited col. 23, line 62 to col. 24, line 5 (Second Office Action, pg. 5) of Fielding does not teach that an operating system command is used to transmit the message to the message queue for the destination object when the source and destination nodes are the same. Instead, the cited cols. 23-24 mentions using the SUN's rpcgen functionality to pack a message and send it in a message or use it in an RPC call. Automatic unpacking of these messages are also supported. The Examiner has not cited any part of Fielding or other art that shows that the rpcgen functionality or RPC call used to

send the message comprises an operating system command in the source node to send the message to the destination object within the source node.

Accordingly, claims 2, 16, and 30 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Pettus.

Claims 4, 18, and 31 depend from claims 3, 17, and 30 and further require that the communication interface comprises a bus and wherein including the address of the destination node in the message causes the destination node to read the at least one message packet transmitted on the bus.

The Examiner cited col. 11, lines 52-60 of Fielding as teaching the additional requirements of these claims. (Second Office Action, pg. 4) Applicants traverse.

The cited col. 11 mentions the use of the LAPB message delivery task to forward messages from one node to another using the LAPB protocol. It also monitors communication link status and notifies of status change. Although the Examiner cites the LAPB protocol, the Examiner has not shown where the LAPB protocol teaches that the source node includes the address of the destination node in the message that causes the destination node to read the message packet transmitted on the bus. Further, the cited art does not teach the combination that the message packet includes the requirements of the intervening claims 3, 17, and 31 that the message packet includes the determined address of the destination node and the address of the destination object.

Accordingly, claims 4, 18, and 31 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Pettus.

Claims 5, 19, and 35 depend from claims 2, 16, and 30 and further require that sending the message to the destination object in the destination node comprises: determining, in the destination node, the destination object for the at least one message packet; and extracting, in the destination node, the message from the message packet, wherein the invoked operating system command in the destination node transmits the message to the message queue associated with the destination object.

The Examiner cited col. 23, line 62 to col. 24, line 5 of Fielding as teaching the requirement of invoking the operating system command in the destination node to transmit the message to the message queue. (Second Office Action, p. 6) As discussed, the cited cols. 23-24 mentions using SUN's rpcgen functionality to pack a message and send it in a message or use it

in an RPC call. Automatic unpacking of these messages are also supported. The Examiner has not cited any part of Fielding or other art that shows that the rpcgen functionality or RPC call used to transmit the message comprises an operating system command in the destination node that is used to transmit the message to the message queue associated with the destination object within the destination node. Further, the cited cols. 23-24 do not teach the claim requirements because they discuss an RPC call regardless of whether the application and service are on the same node or machine.

Accordingly, claims 5, 19, and 35 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Pettus.

Claims 11, 25, and 39 depend from claims 1, 15, and 29 and further require that each object is assigned a unique object identifier in the system, and wherein the unique identifier is used within all nodes to identify the destination object to receive the message.

The Examiner cited col. 19, lines 38-52 of Fielding as teaching the additional requirements of these claims. (Second Office Action, pg. 7-8) Applicants traverse.

The cited col. 19 mentions that application access tasks include a file specification used to specify services an inaas.d daemon can serve. Given an identifier for an application, the inaas.d provides a socket connection to the designated access agent. Information is usually exchanged over this socket connection (for example UDP port numbers) between a client task and the access agent to access and/or startup.

The cited Fielding mentions that given an identifier of an application, a socket is provided to the designated access agent. However, the claims require that the unique object identifier is used within all nodes to identify the destination object to receive the message. The cited Fielding does not teach that the same a unique object identifier to identify the destination object in the received message. Thus, Fielding does not teach that the same identifier is used to identify the destination object when the destination and source nodes are the same as well as when they are different.

Accordingly, claims 11, 25, and 39 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Pettus.

2. Claims 8-10, 14, 22-24, 28, 36-38, and 42 are Patentable Over the Cited Art

The Examiner rejected claims 8-10, 14, 22-24, 28, 36-38, and 42 as obvious (35 U.S.C §103(a)) over Pettus and Fielding and further in view of Lea (U.S. Patent No. 6,349,352). Applicants traverse.

First off, these claims are patentable over the cited art because they depend from one of claims 1, 15, and 29, which are patentable over the cited art for the reasons discussed above. Moreover, the following discussed dependent claims provide additional grounds of patentability over the cited art.

Claims 10, 23, and 38 depend from claims 1, 15, and 29 and further requires that the system comprises a storage library system, and the electro-mechanical component comprises a component of a storage library system.

The Examiner cited col. 16, lines 20-25 of Lea as teaching the requirements of these claims. (Office Action, pg. 11). Applicants traverse.

The cited col. 16 mentions that a high level UI library provides components used by device modules to build UIs for their corresponding devices. “UI” refers to a user interface. (Lea, col. 13, line 14).

Nowhere does the cited Lea teach that the system comprises a storage library system and that a component node for an electro mechanical component comprises a component of a storage library system. There is no teaching or suggestion in the cited Lea or Pettus concerning the use and arrangement of nodes and components as claimed for a storage library system. The Examiner has also not provided any motivation to use the claimed system with a storage library system.

Accordingly, claims 10, 23, and 38 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Pettus.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-42 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0466.

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The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

Dated: March 30, 2006

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